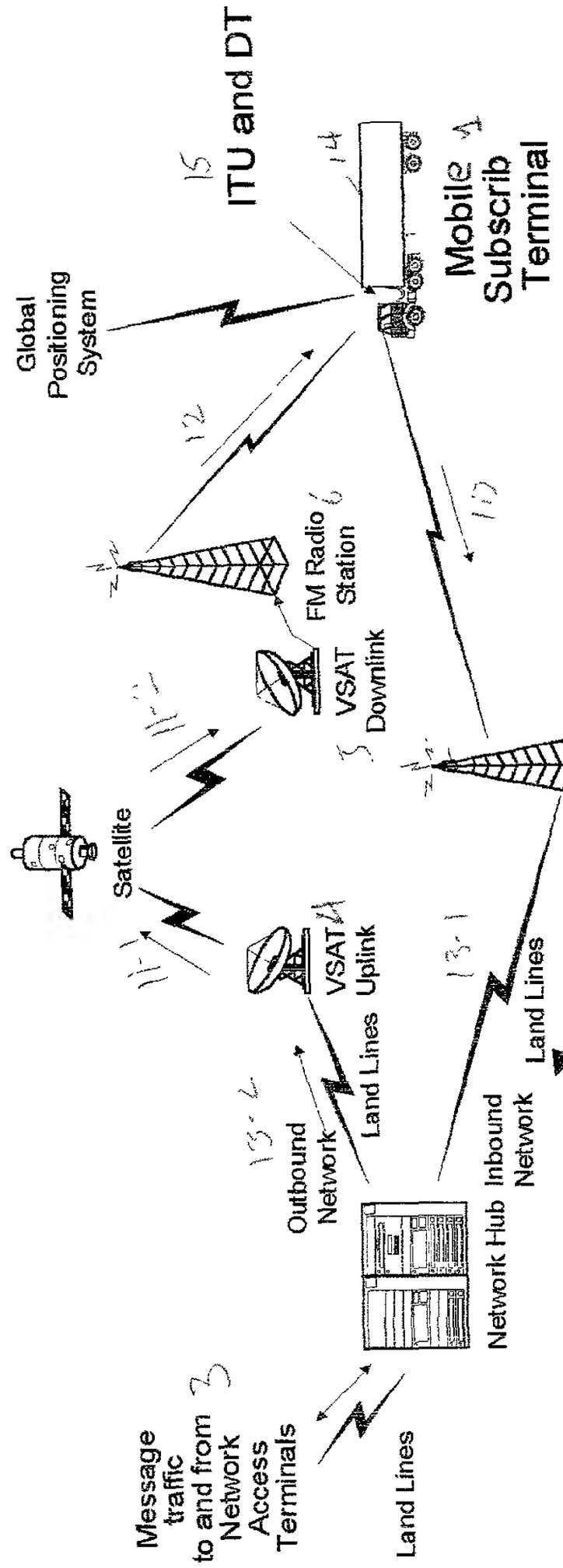

ITU and DT
Mobile Subscrib Terminal
Global Positioning System
FM Radio Station
VSAT Downlink
Satellite
VSAT Uplink
Land Lines
HF Receive Station
Outbound Network
Inbound Network
Land Lines
Network Hub
Message traffic to and from Network Access Terminals
Land Lines

FIG. 1

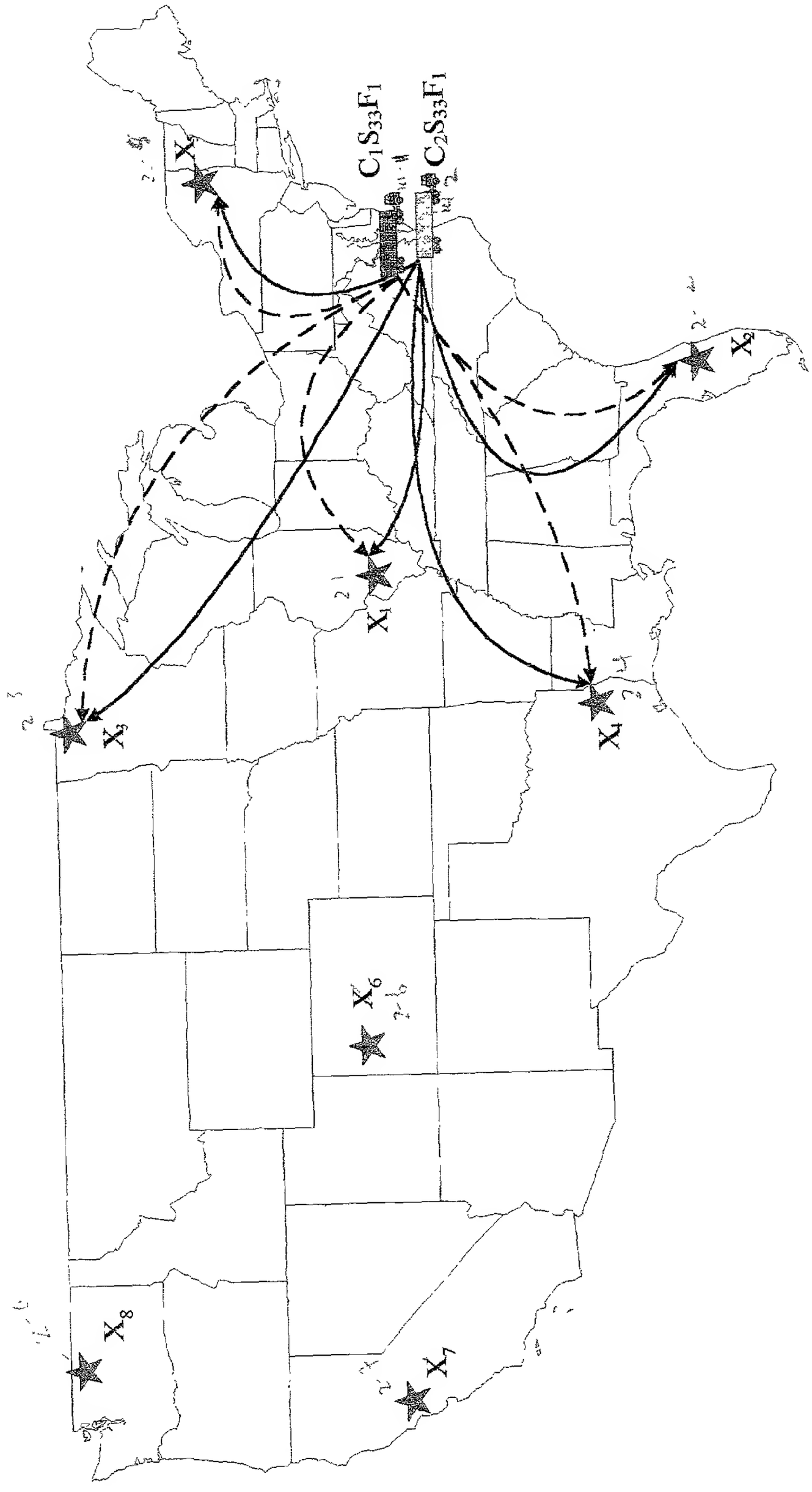


FIG. 2

Prior Art : Terion Low Rate HF Modulator

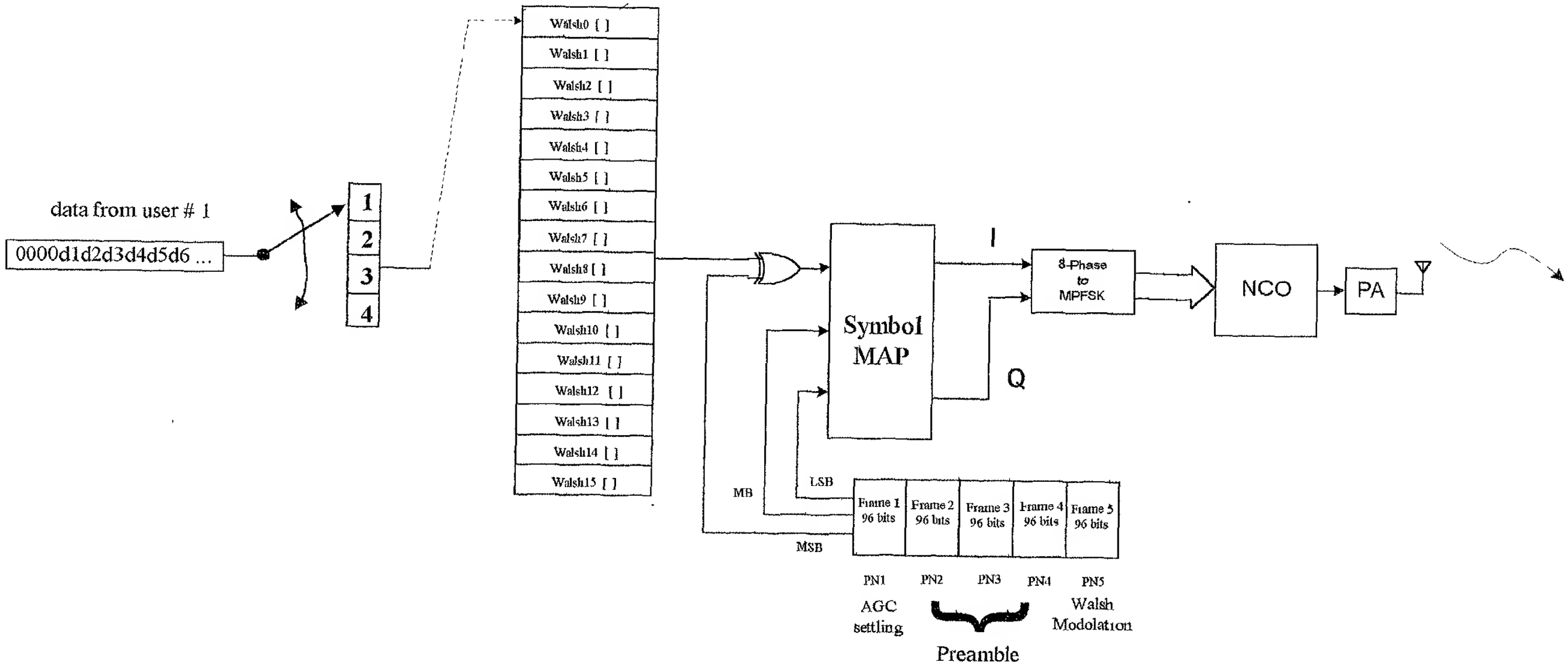


FIG. 3

Docket/App No.: 2293.2004-000
Title: Quasi Orthogonal Hybrid Walsh-PN ...
Inventors: Madjid Adam Belkerdid

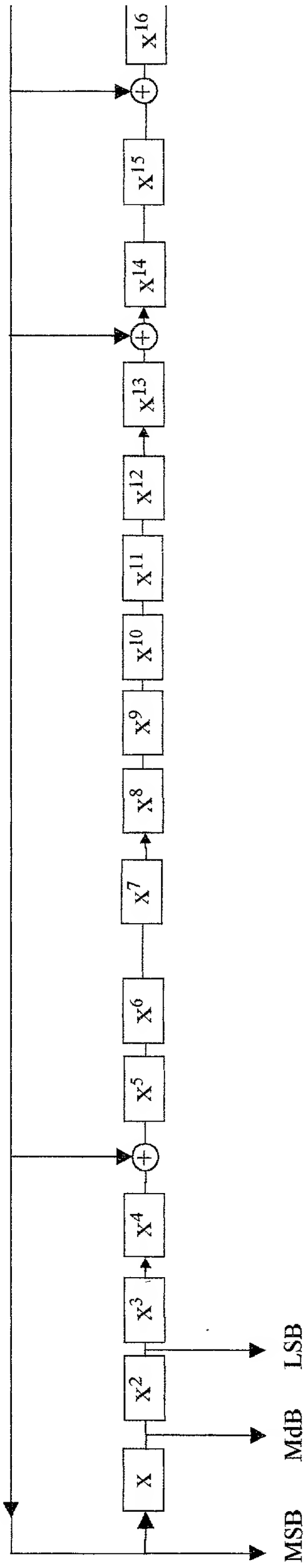


FIG. 4

TOETTO" 68E09260

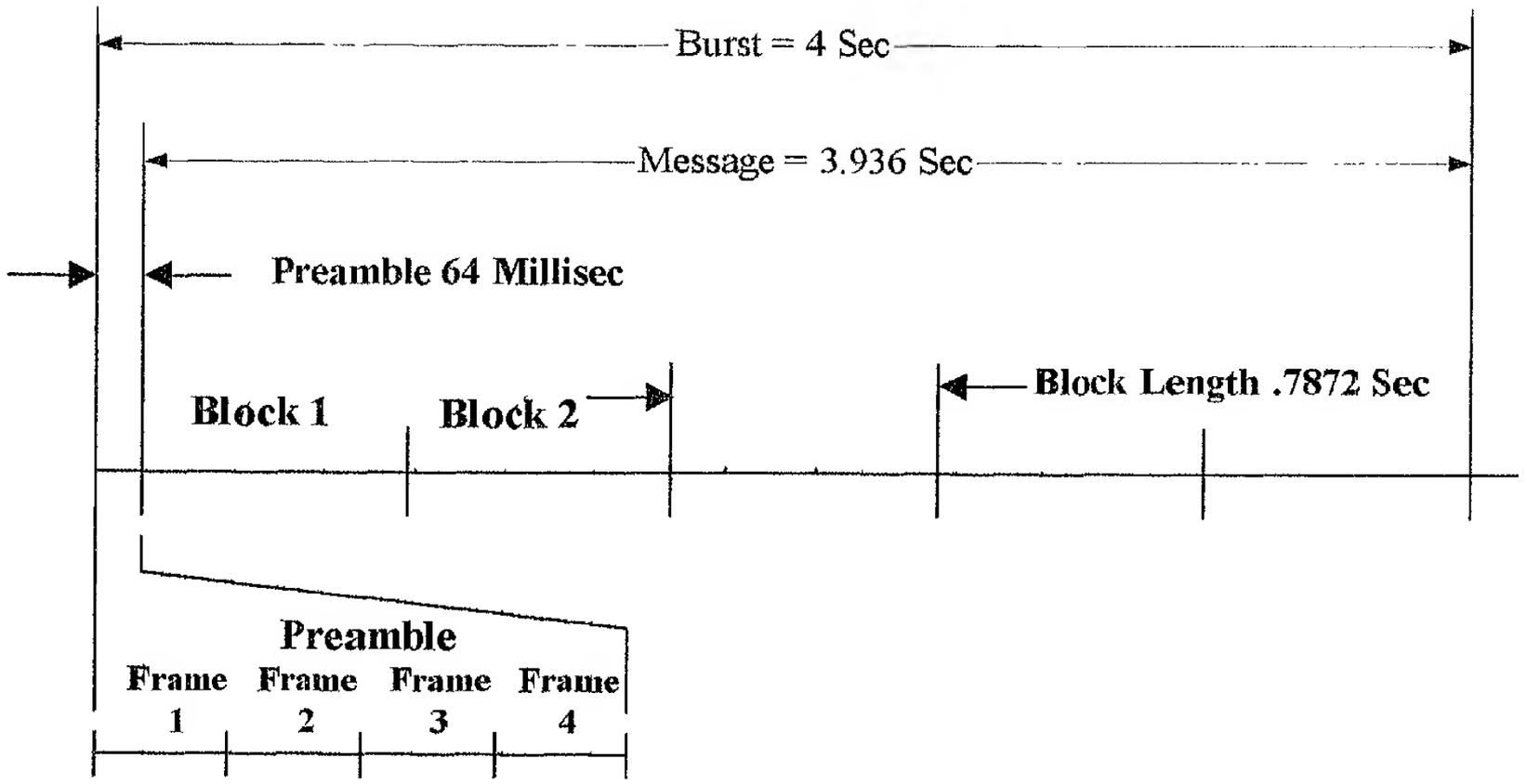


FIG. 5

New Low Rate HF Modulator Using Orthogonal Codes

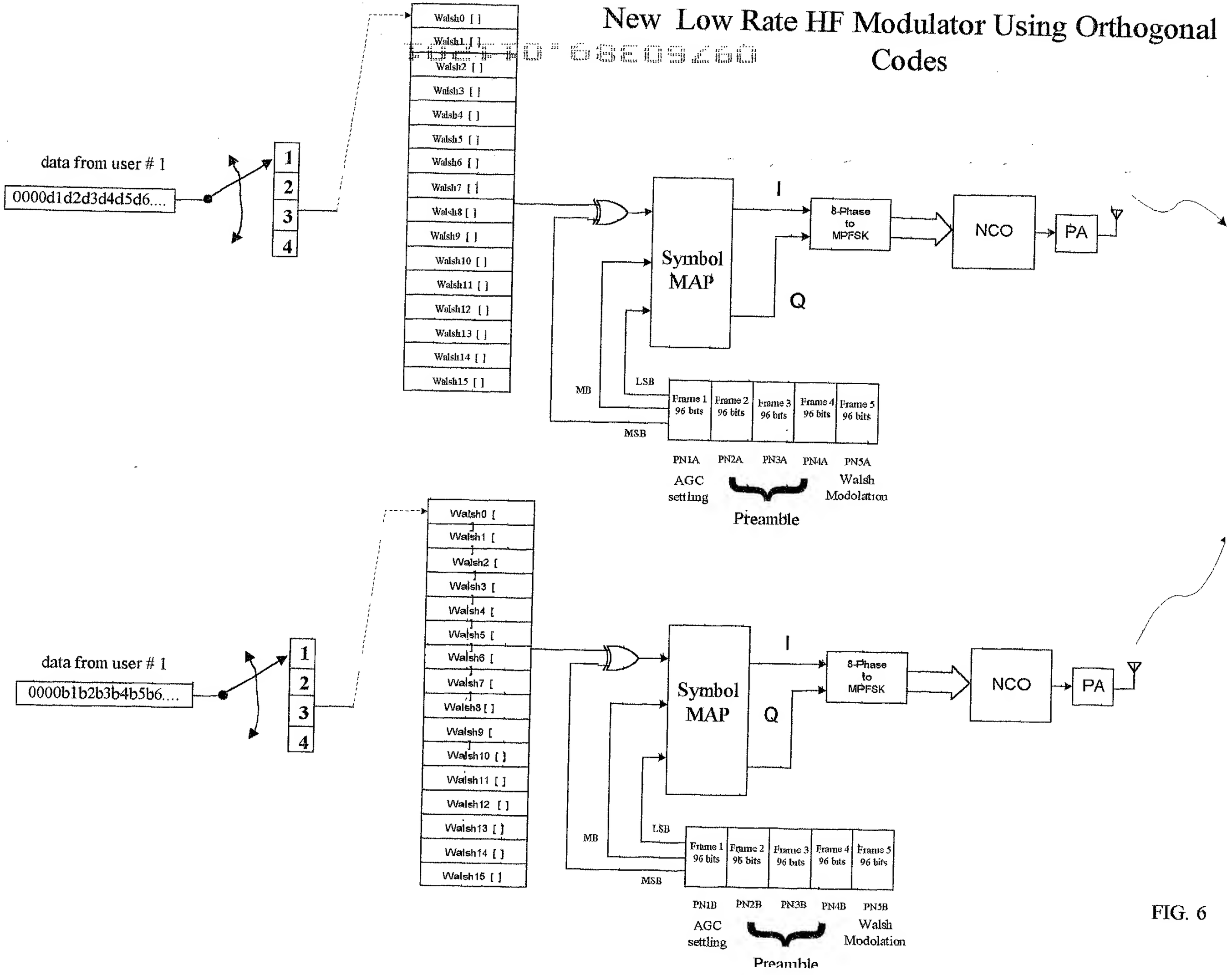


FIG. 6

Docket/App No.: 2293.2004-000
Title: Quasi Orthogonal Hybrid Walsh-PN ...
Inventors: Madjid Adam Belkerdid

New Demodulator set to receive users of orthogonal code A

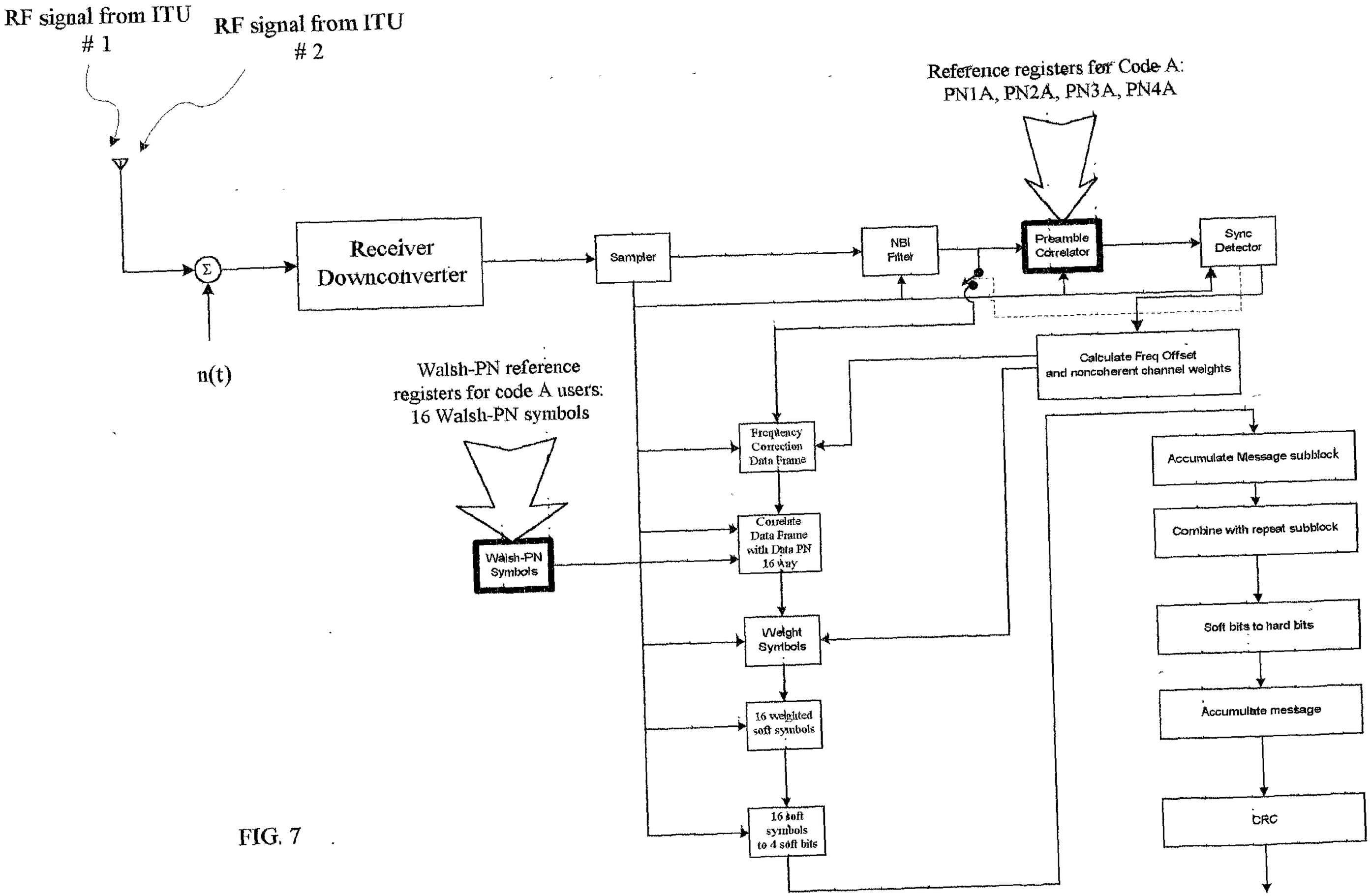


FIG. 7

Docket/App No.: 2293.2004-000
Title: Quasi Orthogonal Hybrid Walsh-PN ...
Inventors: Madjid Adam Belkerdid

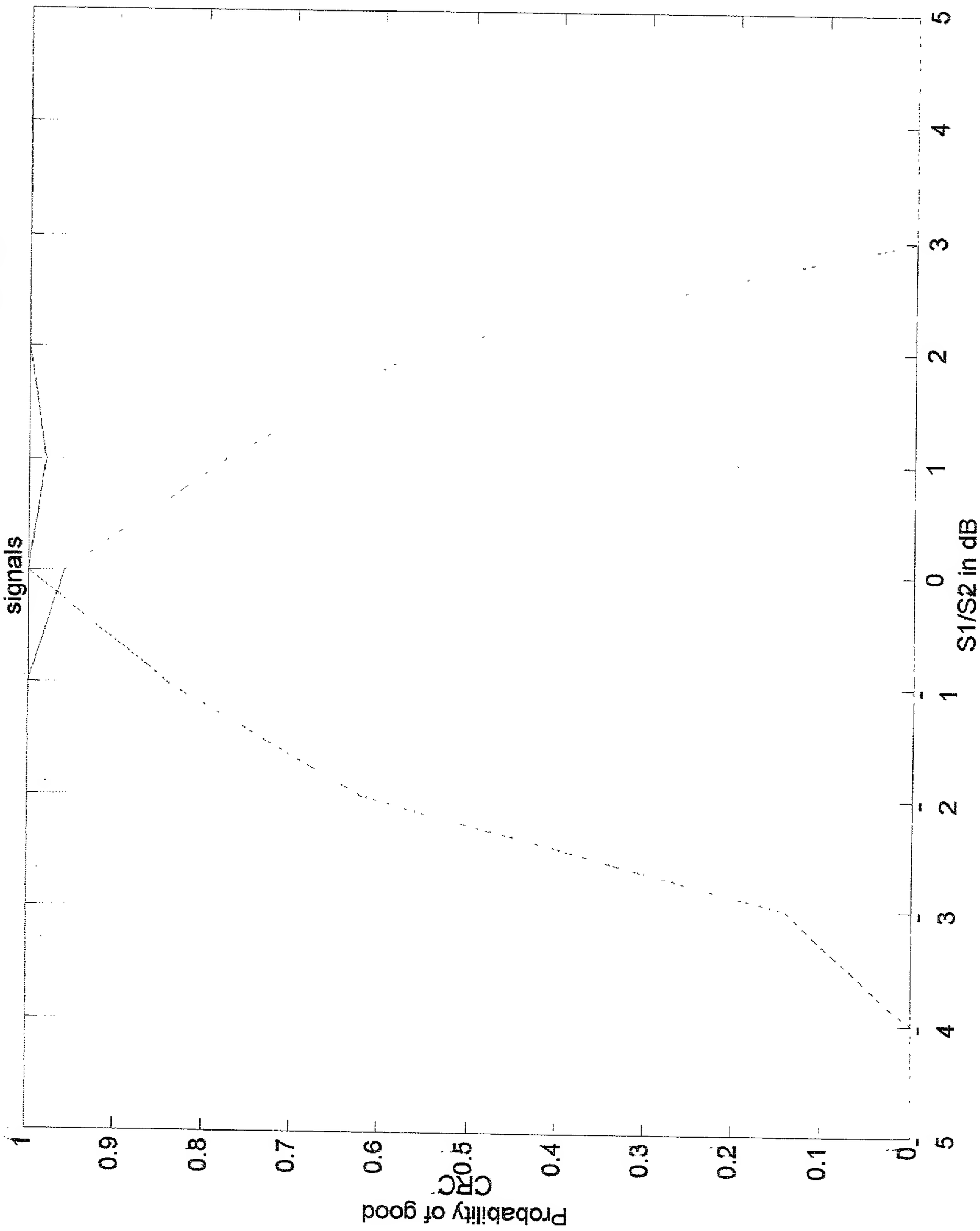
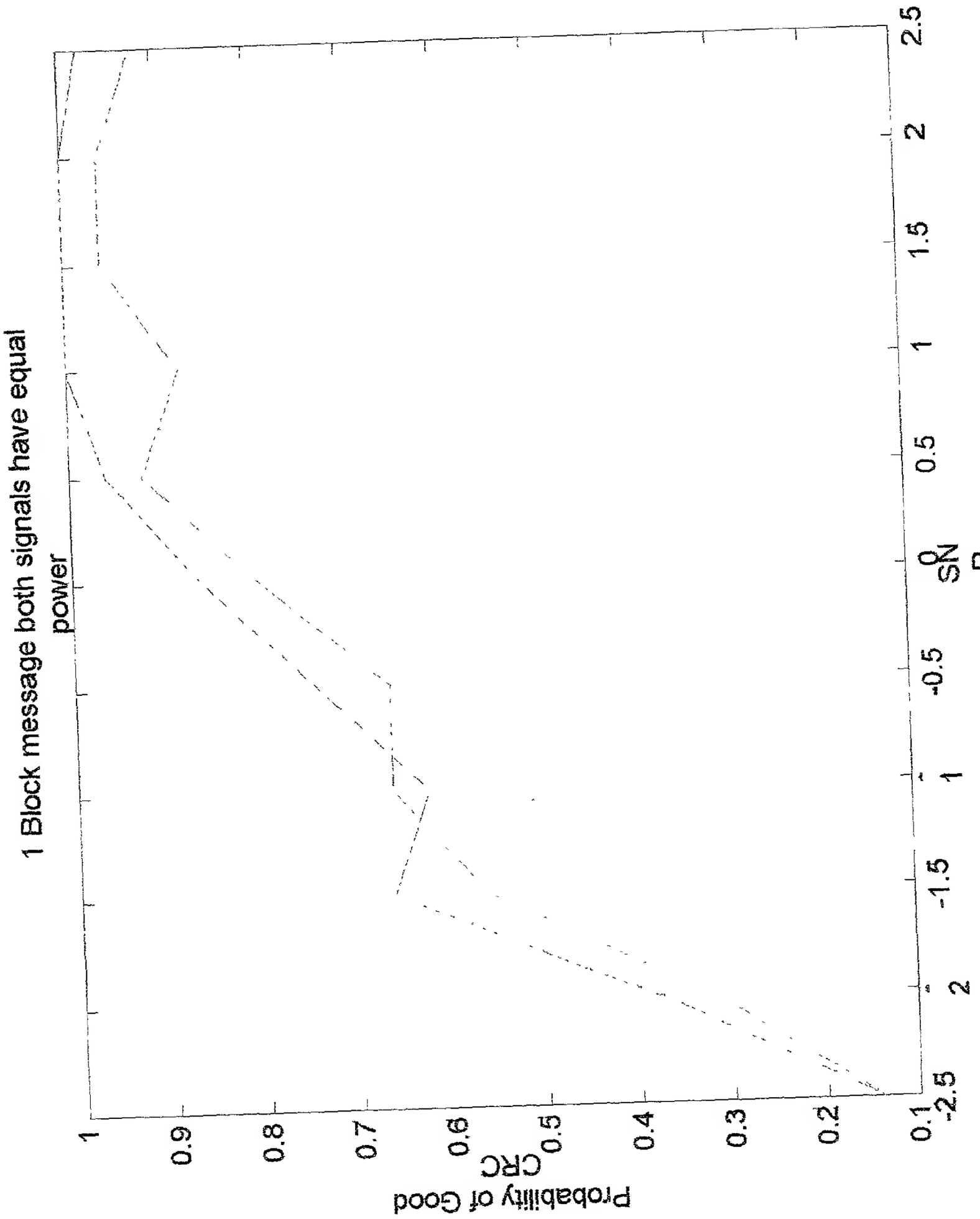

Probability of good CRC
S1/S2 in dB
delay [d 25 msecs] uniformally distributed between transmitted signals
Block Orthogonal Codes (50 samples per SNR)

FIG. 8

FIG. 9


Block message both signals have equal power
Probability of Good CRC
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-2.5
-1.5
2
2.5
1
1.5
0.5
-0.5
SNR

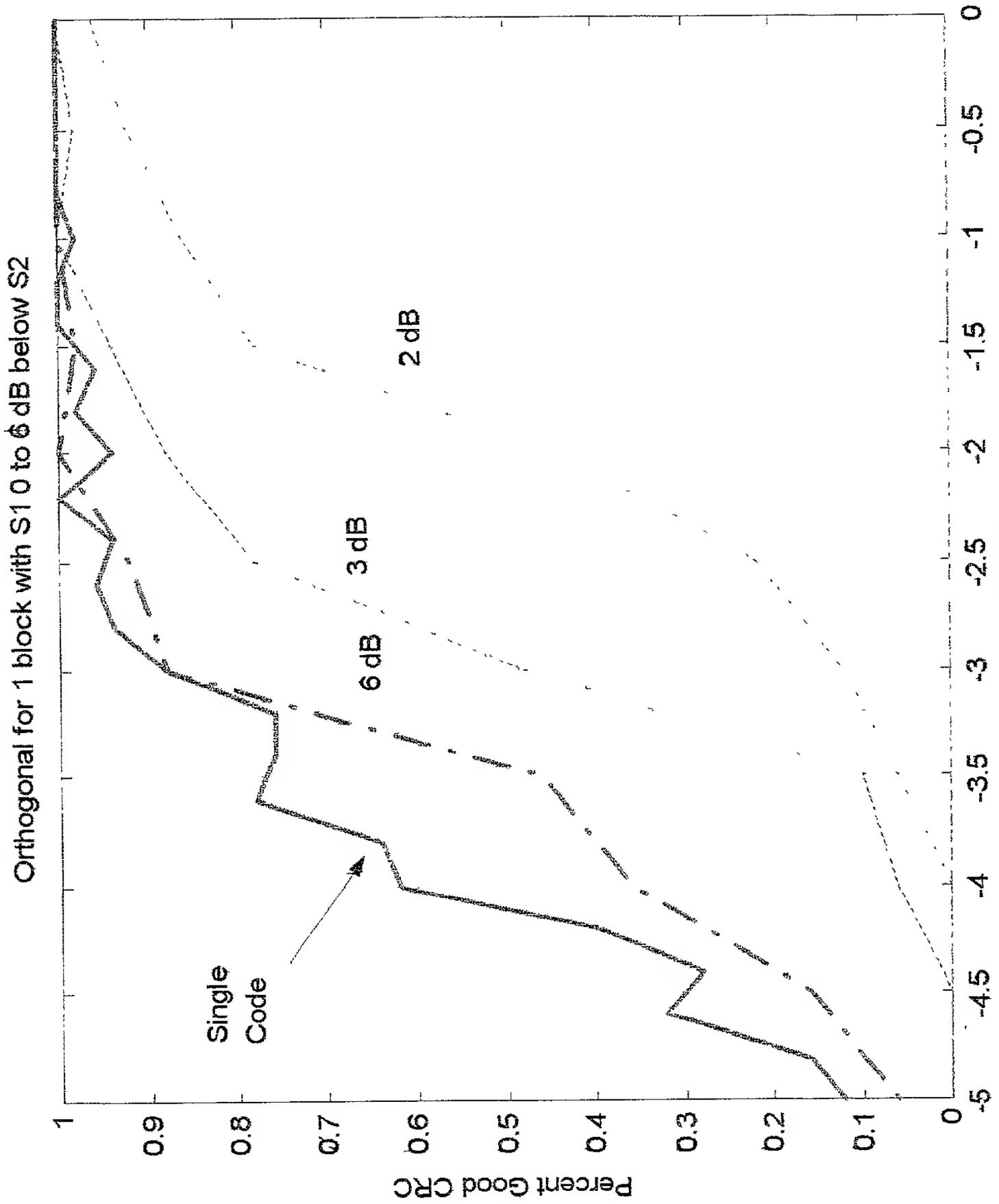

Orthogonal for 1 block with S1 0 to 6 dB below S2
Single Code
6 dB
3 dB
2 dB
Percent Good CRC
SNR (dB)
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-5
-4.5
-4
-3.5
-3
-2.5
-2
-1.5
-1
-0.5
0

FIG. 10